

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

FCC ID: 2ASCB-DDNT55SP

EUT Specification

EUT	DF055NLBD2
Frequency band (Operating)	<input checked="" type="checkbox"/> BT: 2.402GHz ~ 2.480GHz <input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input checked="" type="checkbox"/> RLAN: 5.180GHz ~ 5.240GHz <input checked="" type="checkbox"/> RLAN: 5.260GHz ~ 5.320GHz <input checked="" type="checkbox"/> RLAN: 5.500GHz ~ 5.700GHz <input checked="" type="checkbox"/> RLAN: 5.745GHz ~ 5.825GHz <input type="checkbox"/> Others:
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure <input checked="" type="checkbox"/> General Population/Uncontrolled exposure
Antenna diversity	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
Max. output power	BLE: 7.90dBm 0.0062W WIFI 2.4G: 17.47dBm 0.0558W WIFI 5.2G: 18.20dBm 0.0661W WIFI 5.3G: 18.48dBm 0.0705W WIFI 5.6G: 21.52dBm 0.1419W WIFI 5.8G: 20.99dBm 0.1256W
Antenna gain (Max)	BLE: 4.92dBi WiFi 2.4G: 4.92dBi Wi-Fi 5.2G: 5.06dBi Wi-Fi 5.3G: 5.17dBi Wi-Fi 5.6G: 5.21dBi Wi-Fi 5.8G: 5.28dBi
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation



Limits for Maximum Permissible Exposure(MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	30
1500-100000	--	--	1	30

Friis transmission formula: $Pd=(Pout \cdot G)/(4 \cdot \pi \cdot R^2)$

Where

Pd= Power density in mW/cm²

Pout=output power to antenna in Mw

G= gain of antenna in linear scale

Pi=3.1416

R= distance between observation point and center of the radiator in cm

Pd the limit of MPE. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

Operating Mode	Measured Power	Tune up tolerance	Max. Tune up Power	Antenna Gain	Power density at 20cm	Power density Limits
	(dBm)	(dBm)	(dBm)	(dBi)	(mW/cm ²)	(mW/cm ²)
BLE	7.90	7.90 ±1	8.90	4.92	0.0048	1
WIFI 2.4G	17.47	17.47 ±1	18.47	4.92	0.0434	1
WIFI 5.2G	18.20	18.20 ±1	19.20	5.06	0.0531	1
WIFI 5.3G	18.48	18.48 ±1	19.48	5.17	0.0581	1
WIFI 5.6G	21.52	21.52 ±1	22.52	5.21	0.1180	1
WIFI 5.8G	20.99	20.99 ±1	21.99	5.28	0.1062	1

Note: BLE/ WLAN/ RLAN cannot support simultaneous transmission.

Result: No Standalone SAR test is required.

